

**Work Order ID 75630**

October-27-11 11:36:37 AM

**\*75630\***

Page 1

Item ID: D6009-129 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Crosstube Material  
Start Date: 27/10/2011 Start Qty: 20.00 **\*20\*** Cust Item ID:  
Required Date: 28/02/2013 Req'd Qty: 20.00 **\*20\*** Customer:  
Reference:

Approvals: Process Plan: M.L.J Date: 11/10/27 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6009	Rev A								

100

0.00

**\*100\***

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 15345

a) Order as per Dwg D6009

b) Material: 3.500 x 0.625 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Tolerance are per ASTM B210 (see details on Dwg D6009)

f) Material certification required

CL 11/11/03 20

110

Receive &amp; Inspect for Damage &amp; Mat'l Certs

0.00

**\*110\***

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

11/11/27 (15)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 75630****\*75630\***

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October-27-11 11:36:37 AM

Item ID: D6009-129 Accept

Revision ID:

Item Name: Crosstube Material

Start Date: 27/10/2011 Start Qty: 20.00 \*20\*

Required Date: 28/02/2013 Req'd Qty: 20.00 \*20\*

Reference:

\*N9000040100\* Setup Start \*NS1\*

Stop \*NS2\*

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120

QC6- Inspect dimensions to drawing

0.00

**\*120\***

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6009

140

Identify as per dwg &amp; Stock Location: 4/6

0.00

**\*140\***

Packaging

Memo

0.00

Packaging

150

QC21- Final Inspection - Work Order Release

0.00

**\*150\***

QC

Memo

0.00

Quality Control

DP 12-7-11

12/10/22

12-10-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

October-27-11 11:36:41 AM

Page 1

Work Order ID: 75630

**\*75630\***

Parent Item: D6009-129

**\*D6009-129\***

Parent Item Name: Crosstube Material

Start Date: 27/10/2011

Required Date: 28/02/2013

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A01.08.17New IssueSM  
alodine DD 10.01.09 verified by:JLM

IPP Rev:B remove

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6009-129P

Purchased

No

110

Each

0.0000

1

20

**\*D6009-129P\***

\*\*

Crosstube Material

*P/p/27 (18)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries



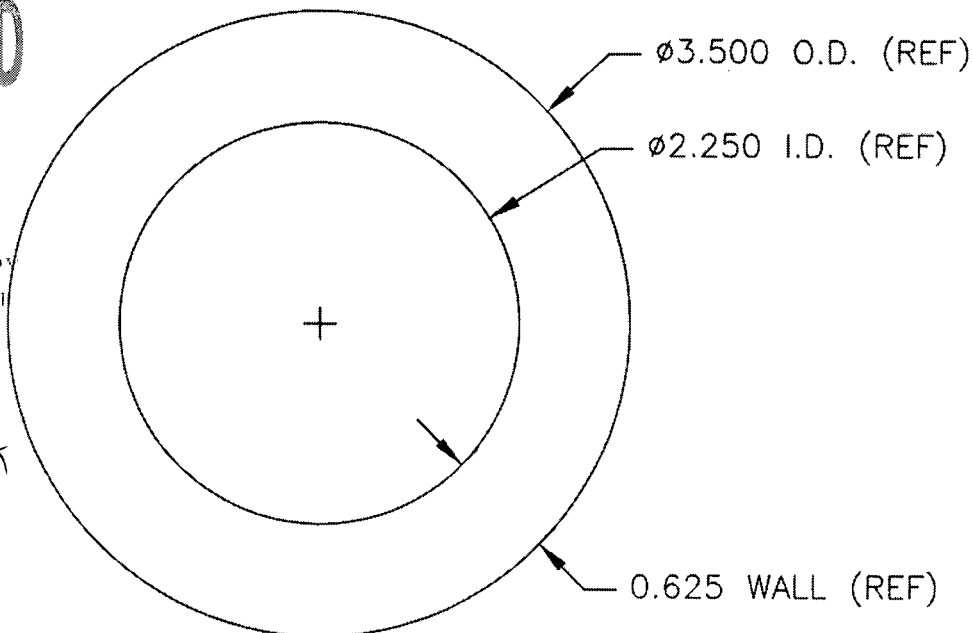
DESIGN #	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6009	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
01.08.17

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 75630  
M.C.S.

11110/27



### NOTES

- 1) D6009-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 129" LONG TUBE: D6009-129

- 2) MATERIAL: 3.500 OD x 0.625 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.063$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.188/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**Boxmarking:**

Dart Aerospace Po. 15345

D6009 - 129

Made in Germany. Dest.: Hawkesbury Ont, Canada

Customer PO.	Po. 15345
Date:	05.31.12

We hereby declare that the wooden packing material are totally free from bark and apparently

	Net Weight	Tare lbs	Gross	Pieces
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S:IVERSANDIUSA\_Packliste44988\_200

# Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:** Dart Aerospace Ltd.  
**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:** 683/12  
**Cert No. / No. du certificat:**

**Bestellnummer:** PO 15345  
**Order No. / No. de commande:**

**Produkt:** Rohre nahtlos gepresst  
**Product / Produit:** Tubes seamless extruded

**Auftrag:** 44988/200  
**Our Reference/Notre Reference:**

**Spezifikation:** AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6009  
**Specification:**

**Werkstoff:** 7075  
**Alloy/Alliage:**

**Zustand:** T 6511  
**Temper/État:**

**Abmessung:** 3,500 INCH x 2,250 INCH x 0,625 INCH x 129,000 INCH  
**Size / Dimension:** D6009-129 3.500 X 0.625 X 129

**Kennzeichnung:** Cert. No. 683/12 - ALUnna - 7075 - T6511 - Cast No. 84170 - AMS - QQ - A - 200/11 - 3.500" OD x 0.625" Wall -  
**Marking/Marquage:** Heat Lot No. 401117 - ALUnna Order Conf. No. 44988/200-1 - P.O. 15345

**Lieferung:** pcs. lbs  
**Delivered Material / Matériel délivré:** 18 1349  
**Country of Manufacture:** Germany  
Products are in accordance with applicable RoHS

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

Elemente ohne Grenzwerte:  
einzel max. 0,05 %, insgesamt 0,15 %

Charge/ Cast No.	min.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
	max.	0,40	0,50	1,2	0,30	2,1	0,18	5,1	0,20					
84170		0,06	0,14	1,44	0,04	2,46	0,19	5,78	0,03	0,04	0,01			0,0003

**Hydrogen content:** 0,13

**ccm/100 g Al** Elements without indication < 0,01 %

**country of melt manufacturer:** Germany

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	77,0	66,0	7,0			
max.						
1	85,405	78,155	12,0			401117
2	85,985	78,590	12,0			
3	85,405	77,865	11,0			

RMS: outside 25 - max. 20,0 µ"

## Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

## Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

## Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande



# EXTRUSION INSPECTION SHEET

		SIDE A	SIDE B	SIDE A / B				ULTRA SONIC MEASUREMENTS				
TUBE #	TOTAL LENGTH	DIA two readings	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	129.00"	3.500"		2.250"	0.625"	0.010"	N/A	Middle	N/A			
1	129.00"	3.497"/3.501"	3.496"/3.501"	2.223"	0.630"/0.641"	0.015"	N/A	Middle	0.642"	0.639"	0.650"	0.640"
2	129.00"	3.495"/3.497"	3.488"/3.499"	2.223"	0.625"/0.637"	0.035"	N/A	Middle	0.640"	0.647"	0.641"	0.637"
3	129.00"	3.493"/3.495"	3.495"/3.500"	2.223"	0.635"/0.641"	0.015"	N/A	Middle	0.644"	0.642"	0.633"	0.636"
4	129.00"	3.497"/3.501"	3.492"/3.499"	2.222"	0.627"/0.643"	0.011"	N/A	Middle	0.636"	0.632"	0.644"	0.647"
5	129.00"	3.495"/3.493"	3.492"/3.501"	2.226"	0.627"/0.644"	0.029"	N/A	Middle	0.636"	0.641"	0.636"	0.634"
6	129.00"	3.499"/3.504"	3.499"/3.501"	2.221"	0.628"/0.644"	0.010"	N/A	Middle	0.640"	0.644"	0.639"	0.634"
7	129.00"	3.495"/3.499"	3.496"/3.501"	2.222"	0.625"/0.641"	0.009"	N/A	Middle	0.638"	0.646"	0.637"	0.635"
8	129.00"	3.493"/3.499"	3.490"/3.495"	2.225"	0.632"/0.638"	0.022"	N/A	Middle	0.638"	0.639"	0.637"	0.639"
9	129.00"	3.499"/3.505"	3.499"/3.503"	2.227"	0.634"/0.642"	0.024"	N/A	Middle	0.636"	0.641"	0.644"	0.638"
10							N/A	Middle				
11							N/A	Middle				
12							N/A	Middle				
13							N/A	Middle				
14							N/A	Middle				
15							N/A	Middle				
PART # D6009-129		P/O# 15345			BATCH # B75630			Notes:				

